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and devices to prevent overheating of the dental instrument. To overcome this problem, the present invention provides an optical device 10 which captures light at a remote location, away from the main body of the dental instrument 14, at the end of an extension arm 12, as shown. According to this embodiment, LED 16 generates light at the end of the extension arm 12, away from the main body of the dental instrument 14. It will be appreciated that separating LED 16 away from the main body of the dental instrument 14 is useful for minimizing the heat that is generated within the main body of dental instrument 14. Separating the optical device 10 away from the body of the dental instrument 14 is also ergonomically useful for enabling the dental practitioner to place the tip of the optical device 10 into the mouth of the patient during dental procedures.

IN THE CLAIMS:

Please amend claims 8, 10, 15 and 18-20 to read as follows:

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7. (Twice Amended) An optical device as defined in claim 6, wherein the transparent shield protects the lens from making contact with light-curable compounds while allowing light from the light-generating source to pass through the shield.

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10. (Twice Amended) An optical device as defined in claim 9, wherein the second end of the lens focuses light from the light-generating source into a column of light having a diameter of about 8 mm at a distance of about 3 mm to about 5 mm from the apex of the transparent shield.

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15. (Twice Amended) An optical device as defined in claim 14, wherein the lens focuses the light entering the first end of the lens into a column of light having a diameter of about 8 mm at a distance of about 3 mm to about 10 mm away from the second end of the lens.

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18. (Twice Amended) A light-generating and focusing assembly comprising:
a light-emitting diode;
a lens having a first end and a second end, wherein the first end is positioned so as to receive light from the light-emitting diode, and wherein the second end is configured so as to focus light received by the first end in a desired manner; and
a transparent shield configured so as to protect the lens from physical contact during use and so as to allow light to pass through the transparent shield.

19. (Twice Amended) A light-generating and focusing assembly as defined in claim 18, wherein the lens and the transparent shield comprise at least one of glass, aluminum dioxide, sapphire, quartz, acrylic, polyacrylic, polypropylene, and silicone.

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20. (Twice Amended) A light-generating and focusing assembly as defined in claim 18, wherein at least a portion of the second end of the lens is aspheric and is at least one of hyperbolic, ellipsoidal, and parabolic.

Please add new claims 31-41 as follows:

31. (New) A dental curing light comprising:

a main body portion;

an extension arm attached to the main body portion, the extension arm having an end distal to the main body portion that is suitable for placement into a mouth of a patient;

a light generating source disposed at the end of the extension arm distal to the main body portion; and

a lens removably attached to the end of the extension arm distal to the main body portion and positioned so as to focus light emitted by the light generating source.

32. (New) A dental curing light as defined in claim 31, wherein the main body portion supplies power to the light generating source.

33. (New) A dental curing light as defined in claim 31, wherein the light generating source comprises a light emitting diode.

34. (New) A dental curing light as defined in claim 31, wherein the lens comprises a first side that is substantially flat and an opposite side that is substantially curved.

35. (New) A dental curing light as defined in claim 34, wherein the substantially flat side of the lens is oriented toward the light generating source.

36. (New) A dental curing light as defined in claim 31, wherein the lens is removably attached to the extension arm by means of a transparent shield.

37. (New) A dental curing light as defined in claim 36, wherein the transparent shield holds the lens adjacent to the light generating source.

38. (New) A dental curing light as defined in claim 36, wherein the lens and transparent shield comprise a plastic material.

39. (New) A dental curing light as defined in claim 36, wherein the transparent shield is threadably attached to the extension arm.

40. (New) A dental curing light as defined in claim 36, wherein the transparent shield comprises a conical portion having an apex.

41. (New) A dental curing light as defined in claim 36, wherein the light emitting source and lens are configured so as to be suitable for use in curing Class II restorations.